

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

CLAIMS

What We Claim Is:

1-16. (cancelled)

17. (currently amended) An optical arrangement in an illumination beam path of a confocal laser microscope comprising:

a point-like light source operatively arranged to emit an illumination beam along said illumination beam path; and,

an illumination optical system arranged in said illumination beam path for modifying an illumination diameter of said illumination beam of said microscope, wherein said illumination optical system is a zoom optical system which operates steplessly, wherein said microscope includes a plurality of predefined objectives selectively positionable in said illumination beam path, ~~and~~ said illumination optical system is operatively arranged to modify said illumination diameter to match an entry pupil of a selected one of said plurality of objectives, and wherein said illumination optical system is operatively arranged to automatically modify said illumination diameter.

18. (withdrawn) The optical arrangement according to claim 17, wherein said illumination optical system includes an arrangement of replaceable fixed optics.

19-21. (cancelled)

22. (previously presented) The optical arrangement according to claim 17, wherein said zoom optical system is motorized.

23. (previously presented) The optical arrangement according to claim 22, wherein said zoom optical system is a video camera zoom optical system.

24-25. (cancelled)

26. (withdrawn) The optical arrangement according to claim 18, wherein said illumination optical system is arranged downstream from a point light source of said microscope.

27. (withdrawn) The optical arrangement according to claim 18, wherein said illumination optical system is arranged downstream from an optical fiber light source of said microscope.

28. (previously presented) The optical arrangement according to claim 17, wherein said illumination optical system is arranged downstream from a point light source of said microscope.

29. (previously presented) The optical arrangement according to claim 17, wherein said illumination optical system is arranged downstream from an optical fiber light source of said microscope.

30. (cancelled)

31. (withdrawn) The optical arrangement according to claim 18, wherein said illumination optical system includes an expanding optical system for a coupled-in laser beam.

32. (previously presented) The optical arrangement according to claim 17, wherein said illumination optical system includes an expanding optical system for a coupled-in laser beam.

33. (previously presented) The optical arrangement according to claim 32, wherein said illumination beam is variably expandable in accordance with the ratio of the focal length of said variable optical system to the focal length of said expanding optical system.

34. (previously presented) The optical arrangement according to claim 17, further comprising an optical component in said illumination beam path for altering an intensity distribution of said illumination beam to increase illumination intensity near the edge of said illumination beam.

35. (previously presented) The optical arrangement according to claim 34, wherein said further optical component is an additional lens.

36. (previously presented) The optical arrangement according to claim 34, wherein said further optical component is an annular stop.

37. (previously presented) The optical arrangement according to claim 34, wherein said further optical component is a holographically generated optical element.

38. (currently amended) An optical arrangement in an illumination beam path of a confocal laser microscope comprising:

a point-like light source operatively arranged to emit an illumination beam along said illumination beam path;

an illumination optical system arranged in said illumination beam path for modifying an illumination diameter of said illumination beam of said microscope to match an entry pupil of a selected one of said plurality of objectives, wherein said illumination optical system is a zoom optical system which operates steplessly, and wherein said illumination optical system is operatively arranged to automatically modify said illumination diameter; and,

an additional input whereby a laser light beam from a further light source can be coupled in to said illumination beam path via an additional input and is adaptable to an entry pupil of an objective of said microscope with no adaptation of said actual illumination beam path.

39. (previously presented) The optical arrangement according to claim 17, wherein said microscope is a multiphoton laser scanning microscope.